

NOV 16 2005

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Attention:	Group Art Unit: 2683 Examiner: TORRES, Marcos L.	Fax:	(571) 273-8300
UNITED STATES PATENT AND TRADEMARK OFFICE		Phone:	(571) 272-7926
Pages:	Cover + 2 + 29 = 32	Date:	November 16, 2005
From:	Georgann S. Grunebach Assistant General Counsel	Fax:	(310) 964-0941
		Phone:	(310) 964-4615

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Telephone No. (310) 964-4615  
Georgann S. Grunebach, Reg. No. 33,179  
(Printed Name of Person Signing Certificate)

November 16, 2005  
(Date of Signature)

**Attention: Commissioner for Patents****Attorney Docket No. PD-200101**

Please find attached Re:

Serial No.: 09/661,725

Filing Date: September 14, 2000

➤ REQUEST FOR STATUS (2 pages with 29 pages of attachment )

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Date: November 16, 2005

  
Georgann S. Grunebach, Reg. No. 33,179PATENT  
PD-200101

Customer No. 020991

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	:	Date:	November 16, 2005
DONALD C.D. CHANG et al.	:	Group Art Unit:	2683
Serial No.: 09/661,725	:	Examiner:	TORRES, Marcos L.
Filing Date: September 14, 2000	:		

For: STRATOSPHERIC-BASED COMMUNICATIONS SYSTEM FOR MOBILE USERS  
USING ADDITIONAL PHASED ARRAY ELEMENT FOR INTERFERENCE REJECTION

REQUEST FOR STATUS

Mail Stop Amendment  
Commissioner for Patents  
P. O. Box 1450  
Alexandria VA 22313-1450

Dear Sir:

1. A timely response to a non-final Office Action dated October 2, 2003 was mailed with the U.S. Postal Service under the "Express Mail Post Office to Addressee" service on October December 18, 2003.
2. A Notice of Abandonment for Applicant's failure to timely file a proper reply to the Office letter dated May 24, 2004 was received by Applicants on May 26, 2004.

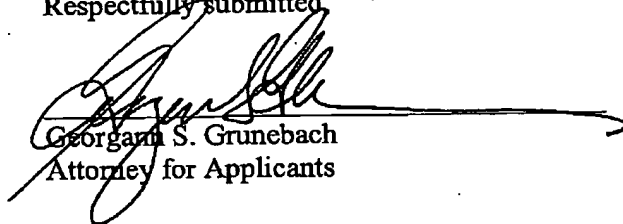
Serial No. 09/661,725

Page 2

3. A telephone discussion with Examiner, as well as a follow up response to the Notice of Abandonment was filed via facsimile transmission on July 22, 2004. A copy of the facsimile transmission is provided.

Applicants respectfully requests that the undersigned be provided with the status of the application.

Respectfully submitted



Georgann S. Grunebach  
Attorney for Applicants

The DIRECTV Group, Inc.  
RE/R11/A109  
2250 E. Imperial Highway  
P. O. Box 956  
El Segundo CA 90245

Telephone No. (310) 964-4615

JUL-22-04 11:30

USPTO

P.01

R-024

Job-936

USPTO

7/22/2004

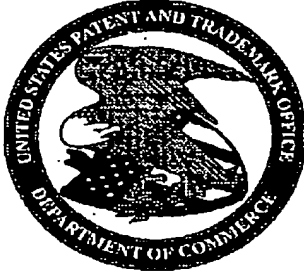
2:34 PM PAGE

1/001

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## Auto-Reply Facsimile Transmission



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Supervising Examiner: William G. Trost

UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner: Marcos L. Torres

Supervising Examiner: William G. Trost

Pages: Cover + 26 = 27

Certificate of Transmission

From: Karen L. Lum - Patent Records Coordinator  
For Georgann S. Grunebach  
Assistant General Counsel DIRECTV

Fax: (703) 872-9306

Phone: (703) 305-4478

Phone: (703) 308-5318

Date: July 22, 2004

Fax: (310) 964-0941

Phone: (310) 964-4615

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Please find attached to:

Inventor: Donald C.D. Chang, et al.

Serial No.: 09/801,725

Filed: September 14, 2000

For: STRATOSPHERIC-BASED COMMUNICATION SYSTEM FOR MOBILE USERS USING ADDITIONAL PHASED ARRAY ELEMENT FOR INTERFERENCE REJECTION

Examiner Torres: Per our telephone conversation of June 8, 2004:

You informed us that you had ordered this file, but had not received the file to see if our previous response due for PTO communication of 10-2-2003 had been associated with the file. Please find attached, copies of our response which was timely filed, on December 18, 2003, with proof of receipt by your office.

- > Amendment Transmittal with Certificate of Express Mailing Dated 12/18/2003
- > Amendment Response Under 37 CFR 51.111
- > Amended Drawing Appropriately Identified
- > Supplemental Information Disclosure Statement with Fee & Modified Form 1449
- > Copy of Express Mail Receipt with "In" Date
- > Copy of Return Post Card data Stamped by the PTO
- > Copy of Hughes Electronics Corporation Deposit Account Statement showing payment extracted for IDS Fee of \$180.00

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The DIRECTV Group, Inc., RE / R11 / A109, P.O. Box 950, El Segundo, CA 90248-0956

PAGE 017 \* RCVD AT 7/22/2004 2:26:35 PM [Eastern Daylight Time] \* SVR:USPTO-EFDR-10 \* DNS:2738300 \* CSID:3109640941 \* DURATION (mm:ss):07:22

CONFIRMATION REPORT - MEMORY SEND

Time : JUL-22-04 11:35  
 Fax number: 3109640941  
 Name : HUGHES LEGAL DEPT

Job : 935  
 Date : JUL-22 11:28  
 To : 17038729306  
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 Supervising Examiner: William G. Trost  
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 Examiner: Marcos L. Torres  
 Supervising Examiner: William G. Trost  
 Pages: Cover + 26 - 27  
*Certificate of Transmission*  
 From: Karen L. Lum - Patent Records Coordinator  
 For Georgann S. Grunebach  
 Assistant General Counsel DIRECTV

Fax: (703) 872-9306  
 Phone: (703) 305-1478  
 Phone: (703) 308-5318  
 Date: July 22, 2004  
 Fax: (310) 964-0941  
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 Karen L. Lum Date

Please find attached Re:

Inventor: Donald C.D. Chang, et al.

Serial No.: 09/661,725

Filed: September 14, 2000

For: STRATOSPHERIC-BASED COMMUNICATION SYSTEM FOR MOBILE USERS USING ADDITIONAL PHASED ARRAY ELEMENT FOR INTERFERENCE REJECTION

Examiner Torres: Per our telephone conversation of June 8, 2004:

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V Amendment Transmittal with Certificate of Express Mailing Dated 12/18/2003  
 V Amendment Response Under 37 CFR 51.111  
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FAX COVER SHEET

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Attention: Examiner: Marcos L. Torres  
Supervising Examiner: William G. Trost  
UNITED STATES PATENT AND TRADEMARK OFFICE

Fax: (703) 872-9306  
Phone: (703) 305-1478  
Phone: (703) 308-5318  
Date: July 22, 2004

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From: Karen L. Lum - Patent Records Coordinator  
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Karen L. Lum

7-22-04  
Date

Please find attached Re:

Inventor: Donald C.D. Chang, et al.

Serial No.: 09/661,725

Filed: September 14, 2000

For: STRATOSPHERIC-BASED COMMUNICATION SYSTEM FOR MOBILE USERS USING ADDITIONAL PHASED ARRAY ELEMENT FOR INTERFERENCE REJECTION

→ Examiner Torres: Per our telephone conversation of June 8, 2004:

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UNITED STATES  
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HUGHES ELECTRONICS CORP  
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AN AMOUNT SUFFICIENT TO  
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TOTAL CHARGES

21114.00

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54740.00

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CUSTOMER NO.: 020991

PATENT  
Docket No. PD-200101IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Donald C. D. Chang, et al.

:Date: December 18, 2003

Serial No. 09/661,725

:Group Art Unit: 2683

Filed: September 14, 2000

For: STRATOSPHERIC-BASED COMMUNICATIONS SYSTEM FOR  
MOBILE USERS USING ADDITIONAL PHASED ARRAY ELEMENT  
FOR INTER FERENCE REJECTION

:Examiner: Torres, Marcos L.

AMENDMENT TRANSMITTAL LETTERMAIL STOP NON FEE AMENDMENT  
COMMISSIONER FOR PATENTS  
P. O. BOX 1450  
ALEXANDRIA, VA 22313-1450

Sir:

Transmitted herewith is an amendment in the above-identified application.

\_\_\_\_ Applicant petitions for an extension of time for \_\_\_\_\_ months(s) to respond to the Office Action dated \_\_\_\_\_  
\_\_\_\_\_. If an additional extension of time is required, please consider this a petition therefor.

Fee \$ \_\_\_\_\_

\_\_\_\_ An extension for \_\_\_\_\_ months(s) has already been secured; the fee paid therefor of \_\_\_\_\_  
is deducted from the total fee due for the total months of extension now requested. \$ \_\_\_\_\_

Extension fee due with this request \$ \_\_\_\_\_

☒ Applicant believes that no extension of time is required to respond to the Office Action dated OCTOBER 2,  
2003. However, this conditional petition is being made to provide for the possibility that applicant has  
inadvertently overlooked the need for a petition for extension of time.☒ No additional fee for claims is required.☒ The fee for claims has been calculated as shown below:

<u>CLAIMS AS AMENDED</u>							
	<u>CLAIMS REMAINING</u>			<u>HIGHEST NUMBER</u>	<u>PRESENT</u>		<u>ADDITIONAL</u>
	<u>AFTER AMENDMENT</u>			<u>PREVIOUSLY PAID FOR</u>	<u>EXTRA</u>	<u>RATE</u>	<u>FEE</u>
TOTAL CLAIMS	19 minus	20*	=	0	x	\$ 18.00	\$ -0-
INDEPENDENT CLAIMS	3 minus	3*	=	0	x	\$ 86.00	\$ -0-
MULTIPLE DEPENDENT CLAIMS				0	x	\$ 290.00	\$ -0-
TOTAL ADDITIONAL FEE FOR THIS AMENDMENT:							\$ -0-

Charge \$ -0- to Deposit Account No. 50-0383 of Hughes Electronics Corporation, El Segundo, California. Please  
charge any additional fees for claims or credit overpayment to Deposit Account No. 50-0383. If any additional extension fee  
is required, please charge to Deposit Account No. 50-0383. This form is submitted in triplicate.

Respectfully submitted,

Vijayalakshmi D. Duraiswamy  
Vijayalakshmi D. Duraiswamy, Registration No.: 31,905  
Attorney for Applicant(s).CERTIFICATE OF EXPRESS MAILING (37 CFR 1.10)EH187376095US12-18-2003EXPRESS MAIL mailing number

Date of Deposit

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Mailing correspondenceEileen T. Hadeler  
Signature of person  
mailing correspondenceCUSTOMER NUMBER 020991  
HUGHES ELECTRONICS CORPORATION  
Patent Docket Administration  
PO Box 956, RE/R11/ M/S A109  
El Segundo, CA 90245-0956  
Telephone: (310) 964-0733  
Date: December 18, 2003EH187376095US\* If less than 20, insert 20  
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Certification under 37 CFR 1.10

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December 18, 2003

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Eileen T. Hadeler

(Printed name of person mailing correspondence) (Signature of person mailing correspondence)

Customer No. 020991

PATENT

Docket No. PD-200101

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:

Date: December 18, 2003

Donald C. D. Chang

Serial No. 09/661,725

Group Art Unit: 2683

Filed: 09/14/2000

Examiner: Torres, Marcos L.

For: STRATOSPHERIC-BASED COMMUNICATIONS SYSTEM FOR MOBILE  
USERS USING ADDITIONAL PHASED ARRAY ELEMENT FOR  
INTERFERENCE REJECTION

AMENDMENT UNDER 37 CFR § 1.111RECEIVED  
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Mail Stop NON-FEE AMENDMENT

Commissioner for Patents

P. O. Box 1450

Alexandria, VA 22313-1450

Dear Sir:

In response to the Office Action dated October 2, 2003, please enter the following amendments and remarks.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Amendments to the Drawings begin on page 7 of this paper and include both an attached replacement sheet and an annotated sheet showing changes.

Remarks/Arguments begin on page 8 of this paper.

An Appendix including amended drawings figures is attached following page 12 of this paper.

Page 1 of 16

Application No. 09/661,725

Amendment dated December 18, 2003

Reply to Office Action of October 2, 2003

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A communications system comprising:

stratospheric platform having a payload controller and a phased array antenna having a plurality of main array antenna elements for generating a plurality of communication beams and a plurality of auxiliary elements for canceling interference between from side lobes of the plurality of the communication beams [[beam]];

a gateway station in communication with said stratospheric platform, said gateway station scaling the plurality of elements to form a plurality of beams and auxiliary element output, said gateway station communicating a control signal to the stratospheric platform to communicate a scaling of elements to form the communication beams and the auxiliary element output.

2. (Original) A communications system as recited in claim 1, wherein the payload controller comprises a demultiplexer for receiving control signals.

3. (Original) A communications system as recited in claim 2, wherein the demultiplexer generates a plurality of element control signals.

4. (Original) A system as recited in claim 3, wherein the element control signals are coupled to an RF feed, the RF feed is coupled to elements of said phased array antenna.

Application No. 09/661,725

Amendment dated December 18, 2003

Reply to Office Action of October 2, 2003

5. (Original) A system as recited in claim 1, wherein said auxiliary element output is a function of a direction of the plurality of the communication beams.

6. (Original) A system as recited in claim 1, wherein the gateway station comprises a plurality of multiplication gates each having a respective weight, said auxiliary element output being a function of said weight.

7. (Original) A system as recited in claim 1, wherein said gateway station further comprises a multiplexer/demultiplexer.

8. (Original) A system as recited in claim 7, wherein said multiplexer/demultiplexer comprises a code division multiplexer/demultiplexer.

9. (Original) A system as recited in claim 1, wherein said ground station is coupled to a terrestrial network.

10. (Original) A system as recited in claim 9, wherein said terrestrial network comprises the Internet.

11. (Original) A system as recited in claim 9, wherein the terrestrial network comprises the public service telephone network.

Application No. 09/661,725

Amendment dated December 18, 2003

Reply to Office Action of October 2, 2003

12. (Currently Amended) A communications system, comprising:

a ground station having;

a beam generator for generating a plurality of beam control signals,

a digital beam former circuit receiving the beam control signals and generating a plurality of first element control signals for generating communication beams and a plurality of auxiliary element control signals for canceling interference from the side lobes of the communication beams,

a multiplexer multiplexing the first element control signals, and

an RF subsystem for communicating an RF signal corresponding to the first element control signals and the auxiliary element control signals;

a stratospheric platform having;

a payload receiver for receiving the RF signals,

a demultiplexer demultiplexing the RF signals into a second plurality of element control signals corresponding to the first element control signals and a second plurality of auxiliary element control signals and generating a plurality of communication beams in response to the second plurality of element control signals and a plurality of auxiliary element outputs in response to the second plurality of auxiliary element control signals.

Application No. 09/661,725

Amendment dated December 18, 2003

Reply to Office Action of October 2, 2003

13. (Original) A system as recited in claim 12, wherein said ground station comprises a gateway station.

14. (Original) A system as recited in claim 12, wherein said ground station is coupled to a terrestrial network.

15. (Original) A system as recited in claim 14, wherein said terrestrial network comprises the internet.

16. (Original) A system as recited in claim 15, wherein the terrestrial network comprises the public service telephone network.

17. (Original) A system as recited in claim 12, wherein the gateway station comprises a plurality of multiplication gates each having a respective weight, said auxiliary element output being a function of said weight.

18. (Currently Amended) A method of controlling a communications system having a stratospheric platform with a phased array antenna with a plurality of main array elements and a plurality of auxiliary elements, said method comprising the steps of:

forming a plurality of communication beams in a gateway station by scaling a plurality of elements;

forming a plurality of auxiliary element outputs as a function of the plurality of the communication beams by forming auxiliary element control signals;

Application No. 09/661,125

Amendment dated December 18, 2003

Reply to Office Action of October 2, 2003

communicating the scaling of elements and the auxiliary element control signals to a stratospheric platform; and

generating the communication beams in response to the scaling of elements by the stratospheric platform; and

generating the auxiliary element outputs in response to the auxiliary element control signals by the stratospheric platform so that side lobe interference from the communication beams is reduced.

19. (Original) A method as recited in claim 18 wherein said step of forming a plurality of auxiliary element outputs comprises the step of weighting the auxiliary element control signals.

Application No. 09/661,125  
Amendment dated December 18, 2003  
Reply to Office Action of October 2, 2003

**Amendments to the Drawings:**

The attached two sheets of drawings includes changes to Figs. 1 and 4. The first sheet, which includes Fig. 1, replaces the original sheet including Fig. 1. The second sheet which includes Figs. 3 and 4, replaces the original sheet including Figs. 3 and 4. In Fig. 1, previously omitted "F" after reference numeral "16" has been added. In Fig. 4, previously omitted reference numeral "78" has been added and "ANTENNNA" has been corrected to read --ANTENNA--.

Attachment: Replacement Sheets (2)

Annotated Sheets Showing Changes (2).

Application No. 09/661,725  
Amendment dated December 18, 2003  
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### REMARKS/ARGUMENTS

Applicants wish to thank the Examiner for considering the present application. In the Office Action dated October 2, 2003, claims 1-19 are pending in the application. Applicants respectfully request the Examiner for reconsideration.

Two figures have been amended. In Fig. 1, "F" has been added after reference numeral "16". See page 6, lines 9 and 10 stating that a "plurality of user terminals 16M and 16F are used to illustrate mobile users and fixed users, respectively". In Fig. 4, the previously omitted reference numeral "78" has been added and "ANTENNNA" has been corrected to read "ANTENNA". See page 10, lines 11-14, including the reference to "main array antenna elements 78".

Claims 1, 5, 9-11, and 18 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Gross* (6,507,739) in view of *Yeh* (4,085,368).

Claim 1 is directed to a communications system that includes a stratospheric platform that has a payload controller and a phased array antenna that has main array elements and auxiliary elements for canceling interference. Claim 1 has been amended to clarify that the interference canceling is between side lobes of the plurality of communication beams. The *Gross* reference teaches an aircraft 210 that provides communication channels to cellular communication units. The *Yeh* reference teaches an apparatus for canceling interference for a phased array antenna that uses an auxiliary array of phased array antennas so that an air signal is derived which is fed back to circuitry which modifies at least one signal received by the auxiliary array. Side lobe interference is described in the background of the *Yeh* reference which



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describes disadvantages of prior systems. Thus, it appears that the *Yeh* reference teaches away from side lobe interference cancellation due to the disadvantages listed in the background.

Claim 1 also recites that the gateway station scales a plurality of elements to form a plurality of beams and auxiliary output. The gateway station communicates a control signal to the stratospheric platform to communicate a scaling of elements to form the communication beams and the auxiliary element output. The gateway station is not taught or suggested in the *Yeh* reference. Applicants therefore respectfully request the Examiner to reconsider claim 1.

Claims 5 and 9-11 are further limitations of claim 1 and are believed to be allowable for the same reasons set forth above.

Claim 18 has also been amended to recite the step of generating the auxiliary element outputs in response to the auxiliary element control signal by the stratospheric platform so that the side lobe interference from the communication beams is reduced. Applicants respectfully submit that this claim is also allowable for the same reasons set forth above.

Claims 2-4 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Gross* in view of *Yeh* as applied to claims 1, 5, 9-11, and 18 above, in further view of *Khalifa* (6,526,288).

Claims 2, 3, and 4 are further limitations of claim 1. The Examiner states that the *Khalifa* reference teaches a demultiplexer. A demultiplexer is taught in the *Khalifa* reference. However, the *Khalifa* reference does not teach that the payload controller comprises a demultiplexer. Further, the *Khalifa* reference does not teach or

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suggest the elements missing from the other two references as described above with respect to claim 1.

Further, the *Khalifa* reference does not teach or suggest the use of a phased array antenna. Claims 3 and 4 are related to a phased array antenna in that claim 3 recites a "plurality of element control signals" and claim 4 recites "the RF feed is coupled to the elements of the phased array antenna." Thus, these elements are not taught or suggested in the *Khalifa* reference. Applicants therefore respectfully request the Examiner to reconsider claims 2-4.

Claims 7 and 8 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Gross* in view of *Yeh* in further view of *Chang* (6,380,893). Claims 7 and 8 are further limitations of claim 1. The *Chang* reference does not teach or suggest the missing elements described above with respect to claim 1. Therefore, Applicants respectfully request the Examiner to reconsider the rejection of claims 7 and 8.

Claims 12-16 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Gross* in view of *McWhirter* (4,727,503) in further view of *Howard* (5,715,516), in further view of *Chang*.

Claim 12 describes a communication system that has a ground station that has a beam generator, a digital beam former circuit, a multiplexer, and an RF subsystem. Claim 12 further recites a stratospheric platform that has a payload receiver and a demultiplexer. The digital beam former circuit generates first element control signals for generating communication beams and a plurality of auxiliary element control signals for canceling interference from the side lobes of the communication beams. The *McWhirter* reference does not teach or suggest that the beam former is in a

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ground station and the first element control signals and the auxiliary element control signals are communicated to a stratospheric platform. Further, the *Howard* reference also fails to teach or suggest the use of a stratospheric platform and a ground station communicating first element control signals and auxiliary element control signals to the stratospheric platform.

The *Chang* reference teaches a stratospheric platform, however, no teaching or suggestion is provided in the *Chang* reference for grouping the elements into a set having an auxiliary element control signal that is used to cancel the interference in the side lobe of the communication beams. Although the *Chang* reference teaches different groupings, no grouping is provided for canceling side lobes of the communication beams. The *Chang* reference is directed to a wave front projection beam former.

Furthermore, there is no teaching or suggestion for forming the combination of references set forth by the Examiner. The Examiner states that the motivation is to reduce interference and enhance transmission and reception quality. Applicants respectfully submit that none of the references teaches or suggests the combination of a ground station that generates first element control signals and auxiliary element control signals and a stratospheric platform that uses the auxiliary element control signals to cancel interference from the side lobes of the communication beams. Applicants respectfully request the Examiner to reconsider claims 12-16.

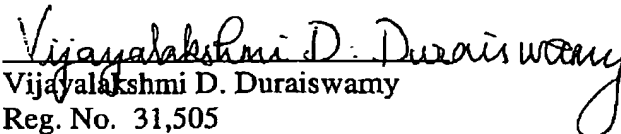
Claims 6, 17, and 19 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Gross* in view of *McWhirter* in further view of *Howard* in view of *Chang*, in further view of *Ide* (6,556,845). Applicants respectfully submit that the *Ide*

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Amendment dated December 18, 2003  
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reference does not teach or suggest the elements missing from claim 12. Applicants therefore respectfully request the Examiner to reconsider claims 6, 17, and 19

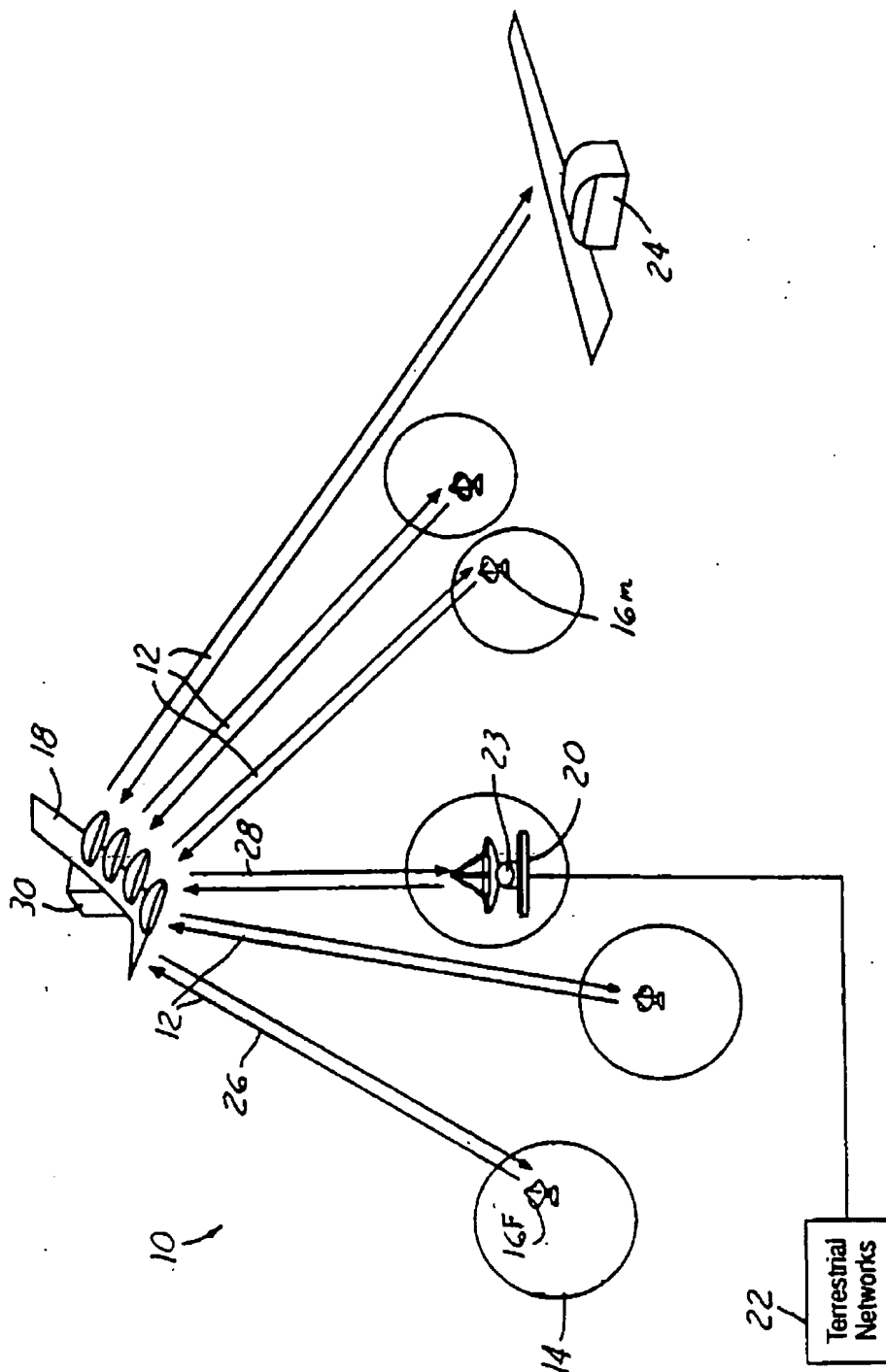
In light of the above amendments and remarks, Applicants submit that all rejections are now overcome. Applicants have added no new material to the application by these amendments. The application is now in condition for allowance and expeditious notice thereof is earnestly solicited. Should the Examiner have any questions or comments which would place the application in better condition for allowance, he is respectfully requested to call the undersigned attorney.

Respectfully submitted,

  
Vijayalakshmi D. Duraiswamy  
Reg. No. 31,505

Date: December 18, 2003

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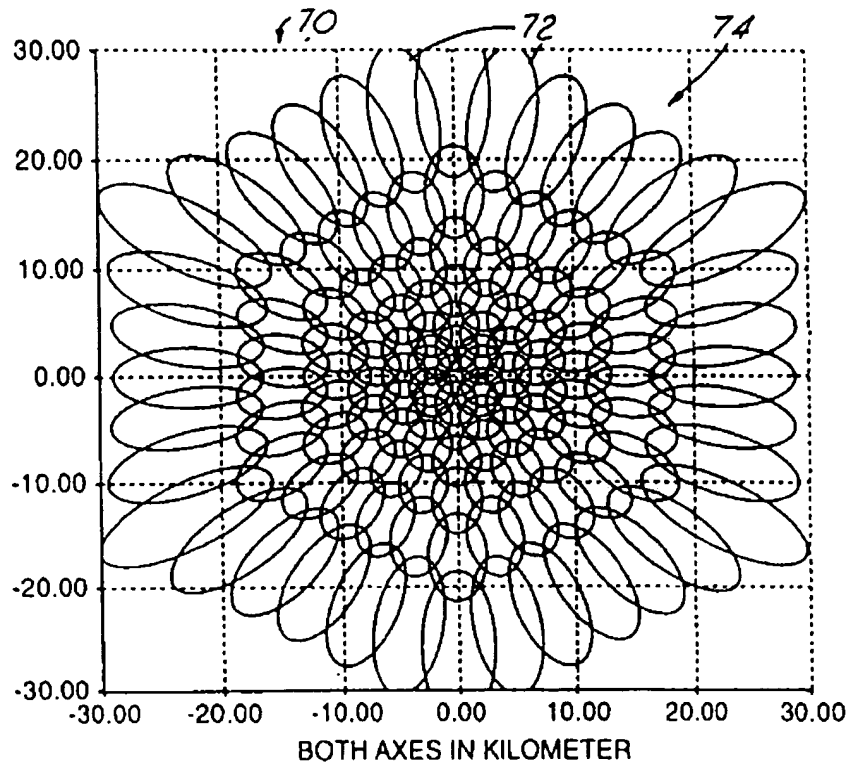


FIG. 3

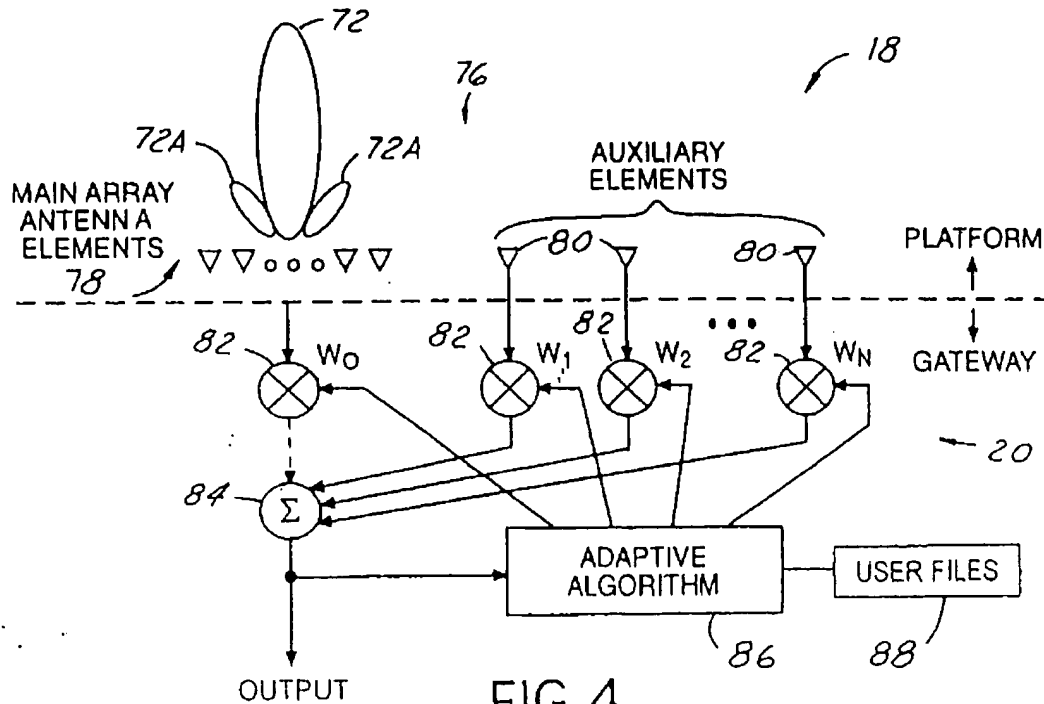
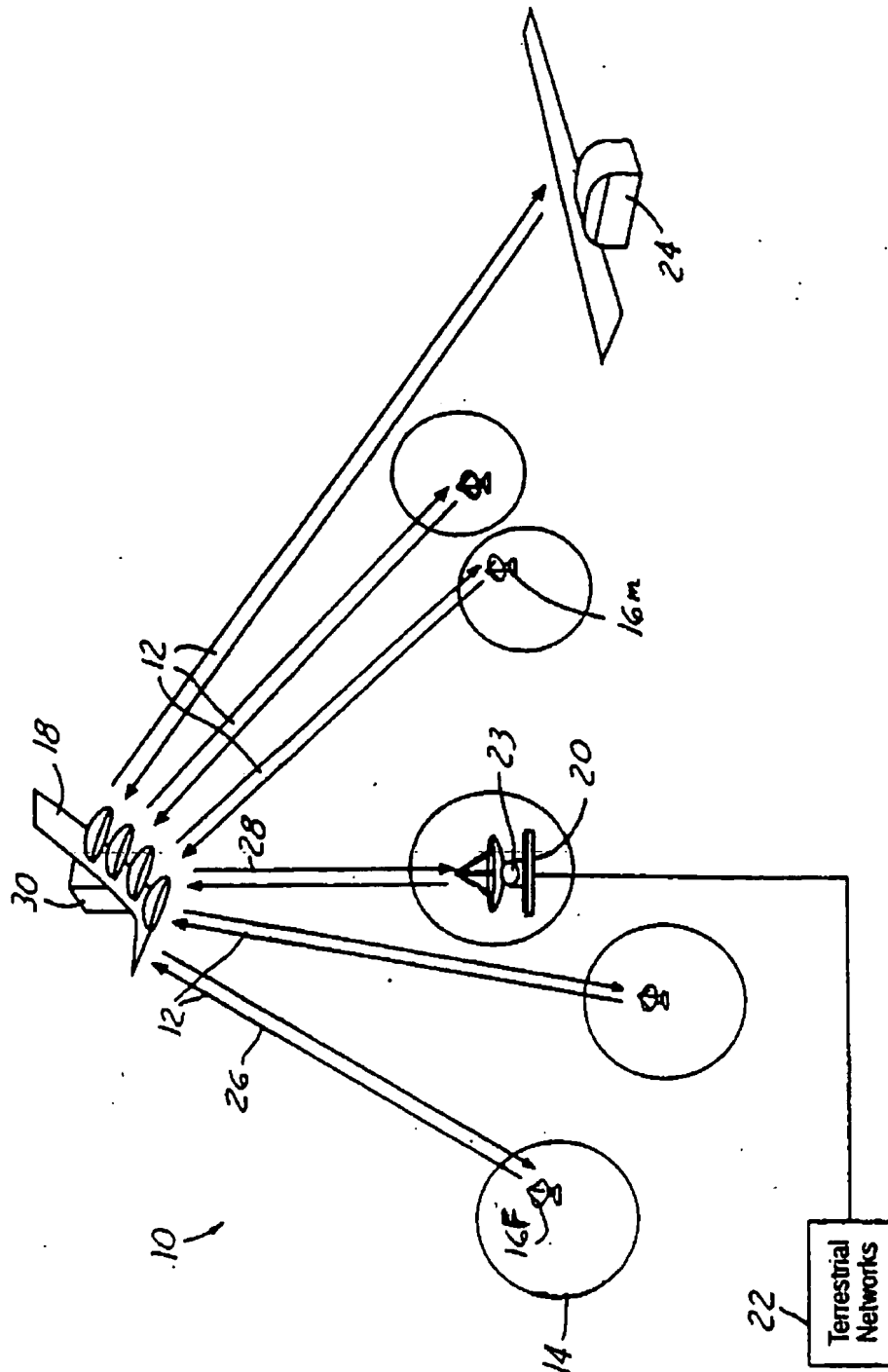
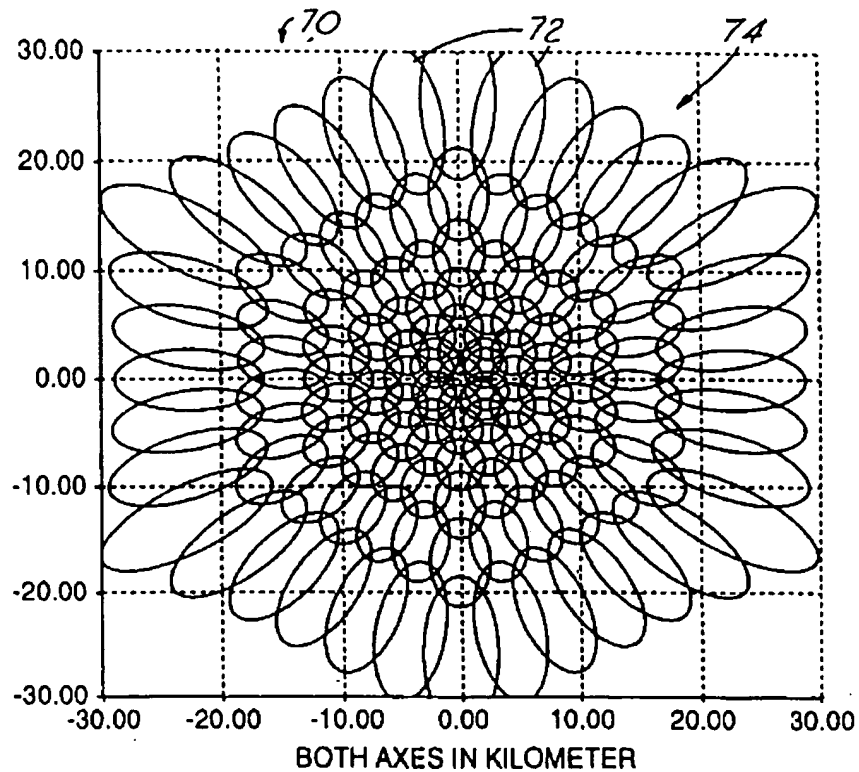
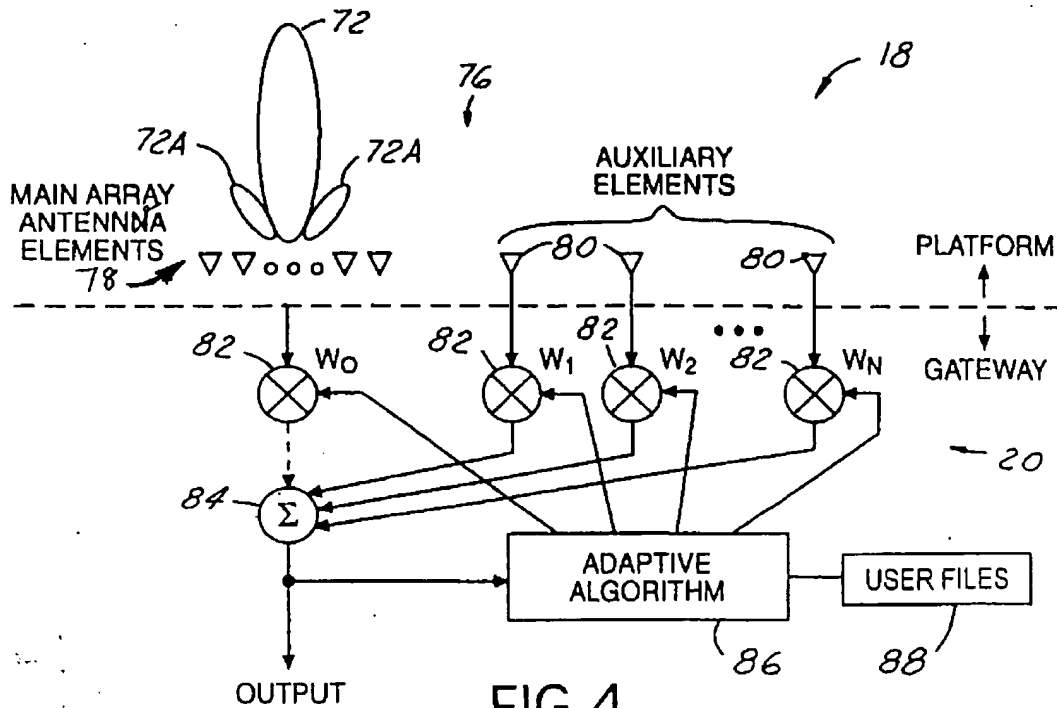


FIG. 4



**FIG. 1**

FIG. 3FIG. 4



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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	: Date: December 18, 2003
DONALD C. D. CHANG, et al.	
Serial No. 09/661,725	: Group Art Unit: 2683
Filed: September 14, 2000	
For: STRATOSPHERIC-BASED	: Examiner: Torresw, Marcos L.
COMMUNICATION SYSTEM FOR	
MOBILE USERS USING ADDITIONAL	
PHASED ARRAY ELEMENTS FOR	
INTERFERENCE REJECTION	

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. 1.97(c)  
WITH PAYMENT OF FEE UNDER 37 C. F.R. 1.17 (p)

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Dear Sir:

The attention of the Office is drawn to the references listed on the accompanying PTO-1449 form (copies enclosed).

This Information Disclosure Statement is not to be construed as a representation that a search has recently been made, that additional information material to the examination of this application does not exist, or that this citation constitutes prior art.

Serial No. 09/661,725 ..... Page 2

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Respectfully submitted,  
DONALD C. D. CHANG, et al

By: Vijayalakshmi D. Duraiswamy  
Vijayalakshmi D. Duraiswamy  
Attorney for Applicant  
Registration No. 31,505

Enclosure: Form PTO-1449 w/references  
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Form PTO-1449	Serial Number: 09/661,725	Docket PD-200101
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(Use several sheets if necessary)	Filing Date September 14, 2000	Group 2683

## U.S. PATENT DOCUMENTS

	Document Number	Date	Name	Class	Sub Class
	3,720,953	03/13/73	Ajioka		
	4,343,005	08/03/82	Han et al.		
	4,635,063	01/06/87	Chang et. al		
	4,799,065	01/17/89	Thompson		
	5,017,927	05/21/91	Agrawal et. al		
	5,077,562	12/31/91	Chang et. al		
	5,151,706	09/29/92	Roederer et al		
	5,584,047	12/10/96	Tuck		
	5,589,834	12/31/96	Weinberg et al.		
	5,812,701	03/18/97	Diekelman		
	5,732,351	03/24/98	Olds et al.		
	5,734,982	03/31/98	Endo et al.		
	5,754,139	05/19/98	Turcotte et al.		
	5,764,187	06/09/98	Rudish et al.		
	5,862,480	01/19/99	Wild et al.		
	5,890,067	03/30/99	Chang et al.		
	5,894,590	04/13/99	Vall et al.		

## FOREIGN PATENT DOCUMENTS

	Document Number	Date	Country	Class	Sub Class
	EP 0 549 220 A2	06/30/93	EPO		
	EP 0776 099 A2	05/28/97	EPO		
	EP 0 860 952 A	08/26/98	EPO		
	EP 0 961 416 A1	12/01/99	EPO		
	EP 1 026 778 A	08/09/00	EPO		
	EP 1 139 583 A2	10/04/01	EPO		
	EP 1 148 662 A2	10/24/01	EPO		
	EP 1 152 552 A2	11/07/01	EPO		
	GB 2 349 045	10/18/00	Great Britain		
	JP 11 261474 A	09/24/99	Japan (believed to correspond to USP 6,308,085)		
	WO 00/14902 A2	03/16/00	WIPO		
	WO 01/95220 A2	12/13/01	WIPO		
	WO 01/95523 A3	12/13/01	WIPO		

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)

	Suzuki, R. et. al, "Mobile TDM/TDMA System With Active Array Antenna", Global Telecommunications Conference, 1991; Globecom '91, vol. 3, Dec. 2-5, 1991, pp. 1569-1573.
	Chiba, Isamu et. al, "Digital Beam Forming (DBF) Antenna System for Mobile Communications", IEEE AES Systems Magazine, Sept. 1997, pp. 31-41.
Examiner	Date Considered

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## U.S. PATENT DOCUMENTS

	Document Number	Date	Name	Class	Sub Class
	5,907,816	05/25/99	Newman et al.		
	5,909,470	06/01/99	Barratt et al.		
	5,917,447	06/29/99	Wang et. al		
	5,946,625	08/31/99	Hassan et al.		
	5,966,371	10/12/99	Sherman		
	5,973,647	10/26/99	Barrett et. al		
	5,974,317	10/26/99	Djuknic et al.		
	5,982,337	11/09/99	Newman et al		
	6,016,124	01/18/00	Lo et al.		
	6,016,421	01/18/00	Weiss et al.		
	6,018,316	01/25/00	Rudish et al.		
	6,020,845	02/01/00	Weinberg et al		
	6,023,463	02/08/00	Wiedeman et al.		
	6,047,186	04/04/00	Yu et al.		
	6,061,562	05/09/00	Martin et al.		
	6,088,341	07/11/00	Hinedi et al.		

## FOREIGN PATENT DOCUMENTS

	Document Number	Date	Country	Class	Sub Class
	WO 02/058186 A2	07/25/02	WIPO		
	WO 02/058272 A2	07/25/02	WIPO		
	WO 02/058273 A2	07/25/02	WIPO		
	WO 97 07609 A	02/27/97	WIPO		

## OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, etc.)

	Miura, Ryu et. al, "A DBF Self-Beam Steering Array Antenna for Mobile Satellite Applications Using Beam-Space Maximal-Ratio Combination", IEEE Trans. On Vehicular Technology, vol. 48, no. 3, May 1999, pp. 665-675.
	Colella, Nicholas J. et al., "The HALO Network™", IEEE Communications Magazine, June 2000, pp. 142-148.
	Colella, Nicholas J. et al., "High Speed Internet Access via Stratospheric HALO Aircraft", INET 99 Proceedings, Internet Society, Technology, Wireless, 13 pages, June 8, 1999.
	Colella, Nicholas, "HALO Network - The Birth of Stratospheric Communications Services & the Decline of Satellite Networks", <a href="http://www.angelhalo.com/techpaper6">http://www.angelhalo.com/techpaper6</a> . Copyright 1997-1999.
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## U.S. PATENT DOCUMENTS

	Document Number	Date	Name	Class	Sub Class
	6,147,658	11/14/00	Higashi et. al		
	6,157,811	12/05/00	Dent		
	6,160,994	12/12/00	Wiedeman		
	6,167,263	12/26/00	Campbell, J. Scott		
	6,188,896 B1	02/13/01	Perahia et al.		
	6,240,072 B1	05/29/01	Lo et al.		
	6,289,004 B1	09/11/01	Mescher et al.		
	6,308,085 B1	10/23/01	Shoki		
	6,324,398 B1	11/27/01	Lanzerotti et al.		
	6,339,708 B1	01/15/02	Wang		
	6,343,205 B1	01/29/02	Threadgill et al.		
	6,366,256 B1	04/02/02	Ramanujam et al.		
	6,388,615 B1	05/14/02	Chang et al.		
	6,392,611 B1	05/21/02	Smith et al.		
	6,434,384 B1	08/13/02	Norin et al.		
	6,452,962 B1	09/17/02	Linsky et al.		
	6,456,846 B2	09/24/02	Norin et al.		
	6,463,282 B2	10/08/02	Norin et al.		
	6,463,294 B1	10/08/02	Holma et al.		
	6,507,314 B2	01/14/03	Chang et al.		

## FOREIGN PATENT DOCUMENTS

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## OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, etc.)

	Djuknic, Goran et al., "Establishing Wireless Communications Services via High-Aeronautical platforms: A Concept Whose Time Has Come?" IEEE Communications Magazine, 9/1997, pp. 128-135.
	Martin, James N. et al., "HALO Network - The Cone of Commerce", <a href="http://www.angelhalo.com/techpaper2">http://www.angelhalo.com/techpaper2</a> , copyright 1997-1998.
	Martin, James N. et al., "HALO Network - Broadband Wireless Services from High Altitude Long Operation (HALO) Aircraft", <a href="http://www.angelhalo.com/techpaper2">http://www.angelhalo.com/techpaper2</a> , copyright 1997-1998.
	Akyildiz, Ian F. et al., "HALO (High Altitude Long Operation): A Broadband Wireless Metropolitan Area Network", IEEE International Workshop on Mobile Multimedia Communications, 11/1999, pp. 271-275.
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3. SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT W/FEE AUTHORIZATION (in duplicate)
4. FORM PTO-1449 WITH REFERENCES
5. POSTCARD RECEIPT

In re: Patent Application of Donald C. D. Chang, et al

Serial No.: 09/661,725

Filed: September 14, 2000

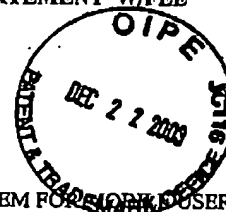
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